UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/416,414	10/12/1999	INDERPAL S. BHANDARI	VG-001	6138

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EXAMINER
COLBERT, ELLA

ART UNIT	PAPER NUMBER
3624	

DATE MAILED: 03/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/416,414	BHANDARI ET AL.
	Examiner	Art Unit	
	Ella Colbert	3624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 December 2002</u> .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>29-96</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>29-96</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

   If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____ .

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

   a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

1.   Claims 29-96 are pending. Claims 29, 34, 35, 37, 39, 50, 54, 55, 57, 62, 63, 65-

67, 76, and 93-96 have been amended in this communication filed 12/09/02,

Amendment A, paper no. 12.

2.   The 35 U.S.C. 112 Second paragraph rejection for claims 29, 37, 39, 50, 54, 62,

63, 65-67, 76, 94 and 96 has been overcome by Applicants' amendment to claims 29,

37, 39, 50, 54, 62, 63, 65-67, 76, and 93-96 and is hereby withdrawn.

Drawings

3.   The drawings are objected to because drawing Fig. 3 (301), Fig. 4 (401, 402),

Fig. 5 (501, 502), Fig. 6 (601, 602), Fig. 7 (701,702), Fig. 8 (801, 802), Fig. 9 (901, 902),

Fig. 12 (1201, 1202, 1204), Fig. 13 (1301, 1302, 1304), and Fig. 14 (140) reference

"attribute-valued string". The claim limitations recite "attribute-value list". The drawings

and the amended claim limitations should be in agreement with the claims. A proposed

drawing correction or corrected drawings are required in reply to the Office action to

avoid abandonment of the application. The objection to the drawings will not be held in

abeyance.

Specification

4.   The Specification is objected to because of the following informalities: Page 23,

line 20, recites "... (e.g., attribute-valued string ..." which is inconsistent with Applicants'

amended claim language. Page 24, line 1, page 25, lines 2, 5, 6, 7, 9, 10, 13- 15, 20

and 23 have a similar problem as well as other pages and lines throughout Applicants'

the Specification. Since the claims have been amended to recite "attribute-value list"

the Specification should be in agreement with the amended claims. Appropriate

correction is required.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 29-40, 48-51, 54-68, 76, 77, and 93-96 are rejected under 35 U.S.C.

103(a) as being unpatentable over (US 6,240,411) Thearling.

With respect to claim 29, Thearling teaches, receiving a user query consisting of

at least one computation and an attribute-value list having one or more elements, each

element being associated with an attribute having a value assigned by a user or a user

process (col. 3, lines 53-67, col. 4, lines 1-47, fig, 1A (17a-17c, 19a-19e); determining

queries in a plurality of queries having the at least one computation and sharing one or

more elements in common with the user query to provide a set of related queries (col. 5,

lines 10-36); and computing a result of the at least one computation for the attribute-

value list associated with each query in the set of related queries (col. 12, lines 17-67

and col. 13, lines 1-21). Thearling did not teach, comparing the results associated with

the set of related queries to determine one or more queries having the greatest-valued

result, or one or more queries having the least-valued result, but it would have been

obvious to one having ordinary skill in the art at the time the invention was made to

compare the results associated with the set of related queries to determine one or more

queries having the greatest-valued result, or one or more queries having the least-valued result and to modify in Thearling in view of Thearling's teachings of queries and inputting a comparison of a record in the database with a value that is averaged and compared and because such a modification would allow Thearling to make a comparison and to perform a computation to arrive at either a greatest-value or a least value attribute. Col. 4, lines 12-16, col. 10, lines 38-67, col. 11, lines 41-47, and col. 12, lines 28-31 discuss queries with a greatest-valued result and a least-valued result.

With respect to claims 30 and 58, Thearling teaches, selecting the at least one computation from a plurality of computations in response to a user or user process input (col. 3, lines 25-31, col. 4, lines 60-62, and col. 5, lines 9-17); selecting one or more attributes from a plurality of attributes in response to the user input (col. 5, lines 28-36); and selecting a value for each attribute selected in response to the user input to form an element (col. 5, lines 23-53 and fig. 5).

With respect to claims 31 and 59, Thearling teaches, wherein the at least one computation defines a relationship between the plurality of queries and a plurality of results (col. 12, lines 33-58 and figs. 10A-10C).

With respect to claims 32 and 60, Thearling teaches, wherein the results associated with the related queries are numeric results (col. Col. 5, lines 44-48, fig. 4B (shows two queries), and fig. 5 (shows the result).

With respect to claims 33 and 61, teaches, comprising the step of selecting one query as the query having the greatest-valued result if it is determined that more than

one query in the set of related queries has the greatest-valued result (col. 11, lines 39-53).

With respect to claims 34 and 62, Thearling teaches, the step of generating a list of queries having the at least one computation, each query being associated with an attribute-value list having the greatest-valued result of all queries in the plurality sharing one or more elements in common with a preceding query or succeeding query in the list of queries (col. 3, lines 1-10 and fig. 3 (shows list of computations and attribute values.)).

With respect to claims 35, 37, & 63, Thearling teaches, the list of queries yields a non-decreasing succession of numeric results and wherein the step of generating a list comprises the steps of:

(a) adding the query in the set of related queries having the greatest-valued result as a last query in the list of queries (col. 10, lines 54-67 and fig. 5 (55)) and (g) repeating steps (b) through (e) until there is no query in the plurality of queries having a result greater than the last query and sharing one or more elements in common with the last query (col. 5, lines 10-36, col. 12, lines 17-67, col. 13, lines 1-21, col. 3, lines 58-67, col. 4, lines 1-44, col. 11, lines 39-53, col. 12, lines 25-32, and fig. 4B (44b, 46b, 47c, & 48b). Thearling did not teach, (f) adding the query having the greatest-valued result to the end of the list as a new query if it is determined that the new last query is not equivalent to the last query and (g) repeating step (f) until there is no query in the plurality of queries having a result greater than the last query and sharing one or more elements in common with the last query, but it would have been obvious to one having

ordinary skill in the art at the time the invention was made to add the query having the

greatest-valued result to the end of the list as a new query if it is determined that the

new last query is not equivalent to the last query and to repeat the steps including step

(f) until there is no query in the plurality of queries having a result greater than the last

query and sharing one or more elements in common with the last query and to modify in

Thearling because such a modification would allow Thearling to search a question that

tells the program what kind of data should be retrieved from the database. A query is

known in the art for specifying the characteristics (criteria) used to guide the computer

to the required information.

These claims dependent are also rejected for the similar rationale given for

claims 29 & 33.

With respect to claims 36 and 64, Thearling teaches, comprising the step of

selecting one query as the query having the least-valued result if it is determined that

more than one query in the set of related queries has the least valued result (col. 8,

lines 66-67 and col. 9, lines 1-8).

These dependent claims are also rejected for the similar rational as given above

for claim 33.

With respect to claims 37 and 65, these dependent claims are rejected for the

similar rationale as given above for claim 35.

With respect to claims 38, 54, 66, 93, & 96, these claims are rejected for the

similar rationale given for claim 35.

With respect to claims 39, 55, 67, and 94, these claims are rejected for the similar rationale as given above for claims 29 and 35.

With respect to claims 40, 56, 68, and 95, Thearling did not teach, wherein the step (d) further comprises the steps of determining whether the first query has the greatest-valued result or the least-valued result, but it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the step (d) further comprise the steps of determining whether the first query has the greatest-valued result or the least-valued result and to modify in Thearling because such a modification would allow Thearling to search a question that tells the program what kind of data should be retrieved from the database. A query is known in the art for specifying the characteristics (criteria) used to guide the computer to the required information.

With respect to claim 48, this dependent claim is rejected for the similar rationale given for claims 35, 38, & 39.

With respect to claim 49, this dependent claim is rejected for the similar rationale given for claims 35-37.

With respect to claims 50 and 76, these independent claims are rejected for the similar rationale given for claims 29 and 38.

With respect to claims 51 and 77, these dependent claims are rejected for the similar rationale given for claim 31.

With respect to claims 54, 93, and 96, Thearling teaches, (g) assigning another computation from the plurality of computations as the first computation (col. 4, lines 10-

47) and (h) repeating steps (f) through (g) for every computation in the plurality of
computations (col. 5, lines 9-18 and col. 12, lines 28-58).

These independent claims are rejected for the similar rationale given for claims 29 and
35.

With respect to claim 57, Thearling teaches, a device for receiving a user query,
a device for determining, a computing device, and a comparator for comparing (col. 1,
lines 13-16 and lines 65-67, col. 2, lines 1-23, col. 4, lines 63-67, and col. 5, lines 1-4
and lines 44-48).

These independent claims are rejected for the similar rationale given above for claim
29.

Claim Rejections - 35 USC § 103

7.   Claims 41-47, 52-53, 69-75, and 78 are rejected under 35 U.S.C. 103(a) as being
unpatentable over Thearling in view of (4,490,811) Yianilos et al, hereafter Yianilos.

With respect to claims 41 and 69, Thearling did not teach, the step of generating
pre-computed greatest-valued and pre-computed least-valued lists by pre-determining
for each query in the plurality of queries whether each query has a greatest-valued
result or a least-valued result for all queries in the plurality of queries having at least one
computation and sharing one or more elements in common with each query.

Yianilos discloses, the step of generating pre-computed greatest-valued and pre-
computed least-valued lists by pre-determining for each query in the plurality of queries
whether each query has a greatest-valued result or a least-valued result for all queries
in the plurality of queries having at least one computation and sharing one or more

elements in common with each query (col. 19, lines 24-67 and col. 20, lines 1-22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to generate pre-computed greatest-valued and pre-computed least-valued lists by pre-determining for each query in the plurality of queries whether each query has a greatest-valued result or a least-valued result for all queries in the plurality of queries having at least one computation and sharing one or more elements in common with each query and to modify in Thearling because such a modification would allow Thearling to rank the list to arrive at the greatest-valued and least-valued result of the queries.

With respect to claims 42, 70, & 75, Thearling did not teach, determining whether any query in the set of related queries is in the pre-computed greatest-valued list to provide a set of max queries and determining whether any query in the set of related queries is in the pre-computed least –valued list to provide a set of min queries. Yianilos discloses, determining whether any query in the set of related queries is in the pre-computed greatest-valued list to provide a set of max queries (col. 5, lines 1-26) and determining whether any query in the set of related queries is in the pre-computed least –valued list to provide a set of min queries (col. 5, lines 29-46). It would have been obvious to one having ordinary skill in the art at the time the invention was made to determine whether any query in the set of related queries is in the pre-computed greatest-valued list to provide a set of max queries and determining whether any query in the set of related queries is in the pre-computed least –valued list to provide a set of min queries and to modify in Thearling because such a modification would allow

Thearling to have a ranked list of the most similar indicia and to compare similarity

values to arrive at the greatest-valued list and least-valued list to result in a set of min

queries.

With respect to claims 43 and 71, Thearling did not teach, the step of displaying

the user query and the result of the user query along with the greatest-valued result and

one or more queries having the greatest-valued result.

Yianilos discloses, the step of displaying the user query and the result of the user

query along with the greatest-valued result and one or more queries having the

greatest-valued result (col. 19, lines 29-68 and col. 20, lines 1-22 (display) "appear". It

would have been obvious to one having ordinary skill in the art at the time the invention

was made to display the user query and the result of the user query along with the

greatest-valued result and one or more queries having the greatest-valued result and to

modify in Thearling because such a modification would allow Thearling to have the

query ranked according to the greatest-valued result and to have the highest ranking

records appear (displayed).

With respect to claims 44 and 72, Thearling did not teach, the step of displaying

further displays the least-valued result and one or more queries having the least-valued

result.

Yianilos discloses, the step of displaying further displays the least-valued result

and one or more queries having the least-valued result (col. 23, lines 24-50 (display)

"observe." It would have been obvious to one having ordinary skill in the art at the time

the invention was made to display further displays of the least-valued result and one or

more queries having the least-valued result and to modify in Thearling because such a modification would allow Thearling to process one query at the time and the value of each letter in a fixed order that is before the user to arrive at a least-valued result.

With respect to claims 45 and 73, Thearling did not teach, the step of displaying the user query and the result of the user query along with each query and the corresponding greatest-valued result in the list.

Yianilos discloses, the step of displaying the user query and the result of the user query along with each query and the corresponding greatest-valued result in the list (col. 2, lines 31-38 and col. 27, lines 32-55). It would have been obvious to one having ordinary skill in the art at the time the invention was made to display the user query and the result of the user query along with the corresponding greatest-valued result in the list and to modify in Thearling because such a modification would allow Thearling to arrive at a result of the greatest-value in the list in the queries.

With respect to claims 46 and 74, these dependent claims are rejected for the similar rationale given for claims 44 and 45.

With respect to claim 47, this dependent claim is rejected for the similar rationale given for claims 43 and 45.

With respect to claims 52 and 78, these dependent claims are rejected for the similar rationale given for claims 42, 43, & 45.

With respect to claims 53 and 79, these dependent claims are rejected for the similar rationale given for claims 42 & 44.

8.   Claims 79-92 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Thearling and Yianilos in view of (US 5,802,515) Adar et al, hereafter Adar.

With respect to claim 79, Thearling and Yianilos did not teach, the step of

displaying displays each query and the corresponding least-valued result in the set of

min queries.

Adar discloses, the step of displaying displays each query and the corresponding

least-valued result in the set of min queries (col. 3, lines 51-60). It would have been

obvious to one having ordinary skill in the art at the time the invention was made to

have a step or displaying displays for each query and the corresponding least-valued

result in the set of min queries and to modify in Thearling and Yianilos because such a

modification would allow Thearling and Yianilos to compute a rank value for each of the

documents in the set of queries, the number of queries and the lowest rank value to

arrive at a result.

With respect to claims 80, 81, 82, 84, & 86-92, Thearling and Yianilos did not

teach, a computing device operable to compute results for sports data, call center data,

customer relationship management data, multimedia data, tennis data, soccer data, golf

data, football data, baseball data, and cricket data. Adar discloses a computing device

operable to compute results for sports data, call center data, customer relationship

management data, multimedia data, tennis data, soccer data, golf data, football data,

baseball data, and cricket data (col. 4, lines 58-65 and col. 9, lines 7-17). Sports data,

call center data, customer relationship management data, multimedia data, tennis data,

soccer data, golf data, football data, baseball data, and cricket data are merely

attributes to obtain a result of a computation.

With respect to claim 83, Thearling and Yianilos did not teach, the computing

device is operable to compute results for banking data. Adar discloses, the computing

device is operable to compute results for banking data (col. 1, lines 26-30). It would

have been obvious to one having ordinary skill in the art at the time the invention was

made to have a computing device operable to compute results for banking data and to

modify in Thearling and Yianilos because such a modification would allow Thearling and

Yianilos to retrieve large amounts of computed information from databases.

With respect to claim 85, Thearling and Yianilos did not teach, the computing

device is operable to compute results for textual data. Adar teaches, the computing

device is operable to compute results for textual data (col. 5, lines 2-17). It would have

been obvious to one having ordinary skill in the art at the time the invention was made

to have a computing device operable to compute results for textual data and to modify

in Thearling and Yianilos because such a modification would allow Thearling and

Yianilos to provide text to a text string processor from a preexisting source with the text

string processor receiving the input text string.

Response to Arguments

9.   Applicant's arguments with respect to claims29-96 have been considered but are

moot in view of the new ground(s) of rejection above.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

      Simoudis et al disclosed a data mining system with data analysis modules.

      Graffe et al disclosed gathering sufficient statistics for data mining.

      Maeda et al disclosed a data analyzing method for generating a rule based on

data items in a database.

      Cipolla, Emil T. disclosed data mining techniques for gaining insight into data.

      Saarenvirta, Gary disclosed mining customer data including customer clustering

and segmentation.

      Pyle, Dorian disclosed data mining and statistical analysis.

      Edelstein, Herb disclosed data mining and IBM' Intelligent Miner.

Inquiries

11.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ella Colbert whose telephone number is 703-308-7064.

The examiner can normally be reached on Monday-Thursday from 6:30 am -5:00 pm.

      If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Vincent Millin can be reached on 703-308-1038. The fax phone numbers

for the organization where this application or proceeding is assigned are 703-305-7687

for Official communications and 703-746-5622 for Unofficial communications.

      Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-308-

1113.

E. Colbert
March 9, 2003

HANI M. KAZIMI
PRIMARY EXAMINER